



October 1994

Travel to Work and School

Greater Perth Region

Statistics

1994	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	1939	1938	1937	1936	1935	1934	1933	1932	1931	1930	1929	1928	1927	1926	1925	1924	1923	1922	1921	1920	1919	1918	1917	1916	1915	1914	1913	1912	1911	1910	1909	1908	1907	1906	1905	1904	1903	1902	1901	1900	1899	1898	1897	1896	1895	1894	1893	1892	1891	1890	1889	1888	1887	1886	1885	1884	1883	1882	1881	1880	1879	1878	1877	1876	1875	1874	1873	1872	1871	1870	1869	1868	1867	1866	1865	1864	1863	1862	1861	1860	1859	1858	1857	1856	1855	1854	1853	1852	1851	1850	1849	1848	1847	1846	1845	1844	1843	1842	1841	1840	1839	1838	1837	1836	1835	1834	1833	1832	1831	1830	1829	1828	1827	1826	1825	1824	1823	1822	1821	1820	1819	1818	1817	1816	1815	1814	1813	1812	1811	1810	1809	1808	1807	1806	1805	1804	1803	1802	1801	1800	1799	1798	1797	1796	1795	1794	1793	1792	1791	1790	1789	1788	1787	1786	1785	1784	1783	1782	1781	1780	1779	1778	1777	1776	1775	1774	1773	1772	1771	1770	1769	1768	1767	1766	1765	1764	1763	1762	1761	1760	1759	1758	1757	1756	1755	1754	1753	1752	1751	1750	1749	1748	1747	1746	1745	1744	1743	1742	1741	1740	1739	1738	1737	1736	1735	1734	1733	1732	1731	1730	1729	1728	1727	1726	1725	1724	1723	1722	1721	1720	1719	1718	1717	1716	1715	1714	1713	1712	1711	1710	1709	1708	1707	1706	1705	1704	1703	1702	1701	1700	1699	1698	1697	1696	1695	1694	1693	1692	1691	1690	1689	1688	1687	1686	1685	1684	1683	1682	1681	1680	1679	1678	1677	1676	1675	1674	1673	1672	1671	1670	1669	1668	1667	1666	1665	1664	1663	1662	1661	1660	1659	1658	1657	1656	1655	1654	1653	1652	1651	1650	1649	1648	1647	1646	1645	1644	1643	1642	1641	1640	1639	1638	1637	1636	1635	1634	1633	1632	1631	1630	1629	1628	1627	1626	1625	1624	1623	1622	1621	1620	1619	1618	1617	1616	1615	1614	1613	1612	1611	1610	1609	1608	1607	1606	1605	1604	1603	1602	1601	1600	1599	1598	1597	1596	1595	1594	1593	1592	1591	1590	1589	1588	1587	1586	1585	1584	1583	1582	1581	1580	1579	1578	1577	1576	1575	1574	1573	1572	1571	1570	1569	1568	1567	1566	1565	1564	1563	1562	1561	1560	1559	1558	1557	1556	1555	1554	1553	1552	1551	1550	1549	1548	1547	1546	1545	1544	1543	1542	1541	1540	1539	1538	1537	1536	1535	1534	1533	1532	1531	1530	1529	1528	1527	1526	1525	1524	1523	1522	1521	1520	1519	1518	1517	1516	1515	1514	1513	1512	1511	1510	1509	1508	1507	1506	1505	1504	1503	1502	1501	1500	1499	1498	1497	1496	1495	1494	1493	1492	1491	1490	1489	1488	1487	1486	1485	1484	1483	1482	1481	1480	1479	1478	1477	1476	1475	1474	1473	1472	1471	1470	1469	1468	1467	1466	1465	1464	1463	1462	1461	1460	1459	1458	1457	1456	1455	1454	1453	1452	1451	1450	1449	1448	1447	1446	1445	1444	1443	1442	1441	1440	1439	1438	1437	1436	1435	1434	1433	1432	1431	1430	1429	1428	1427	1426	1425	1424	1423	1422	1421	1420	1419	1418	1417	1416	1415	1414	1413	1412	1411	1410	1409	1408	1407	1406	1405	1404	1403	1402	1401	1400	1399	1398	1397	1396	1395	1394	1393	1392	1391	1390	1389	1388	1387	1386	1385	1384	1383	1382	1381	1380	1379	1378	1377	1376	1375	1374	1373	1372	1371	1370	1369	1368	1367	1366	1365	1364	1363	1362	1361	1360	1359	1358	1357	1356	1355	1354	1353	1352	1351	1350	1349	1348	1347	1346	1345	1344	1343	1342	1341	1340	1339	1338	1337	1336	1335	1334	1333	1332	1331	1330	1329	1328	1327	1326	1325	1324	1323	1322	1321	1320	1319	1318	1317	1316	1315	1314	1313	1312	1311	1310	1309	1308	1307	1306	1305	1304	1303	1302	1301	1300	1299	1298	1297	1296	1295	1294	1293	1292	1291	1290	1289	1288	1287	1286	1285	1284	1283	1282	1281	1280	1279	1278	1277	1276	1275	1274	1273	1272	1271	1270	1269	1268	1267	1266	1265	1264	1263	1262	1261	1260	1259	1258	1257	1256	1255	1254	1253	1252	1251	1250	1249	1248	1247	1246	1245	1244	1243	1242	1241	1240	1239	1238	1237	1236	1235	1234	1233	1232	1231	1230	1229	1228	1227	1226	1225	1224	1223	1222	1221	1220	1219	1218	1217	1216	1215	1214	1213	1212	1211	1210	1209	1208	1207	1206	1205	1204	1203	1202	1201	1200	1199	1198	1197	1196	1195	1194	1193	1192	1191	1190	1189	1188	1187	1186	1185	1184	1183	1182	1181	1180	1179	1178	1177	1176	1175	1174	1173	1172	1171	1170	1169	1168	1167	1166	1165	1164	1163	1162	1161	1160	1159	1158	1157	1156	1155	1154	1153	1152	1151	1150	1149	1148	1147	1146	1145	1144	1143	1142	1141	1140	1139	1138	1137	1136	1135	1134	1133	1132	1131	1130	1129	1128	1127	1126	1125	1124	1123	1122	1121	1120	1119	1118	1117	1116	1115	1114	1113	1112	1111	1110	1109	1108	1107	1106	1105	1104	1103	1102	1101	1100	1099	1098	1097	1096	1095	1094	1093	1092	1091	1090	1089	1088	1087	1086	1085	1084	1083	1082	1081	1080	1079	1078	1077	1076	1075	1074	1073	1072	1071	1070	1069	1068	1067	1066	1065	1064	1063	1062	1061	1060	1059	1058	1057	1056	1055	1054	1053	1052	1051	1050	1049	1048	1047	1046	1045	1044	1043	1042	1041	1040	1039	1038	1037	1036	1035	1034	1033	1032	1031	1030	1029	1028	1027	1026	1025	1024	1023	1022	1021	1020	1019	1018	1017	1016	1015	1014	1013	1012	1011	1010	1009	1008	1007	1006	1005	1004	1003	1002	1001	1000	999	998	997	996	995	994	9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EMBARGOED UNTIL 11.30AM 20 DECEMBER 1995

Travel to Work and School

Greater Perth Region

October 1994

P.C. KELLY
Deputy Commonwealth Statistician
and Government Statistician for Western Australia

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INQUIRIES

■for further information about the statistics in this publication and the availability of unpublished statistics, contact Ellen Stevens on (09) 360 5394.

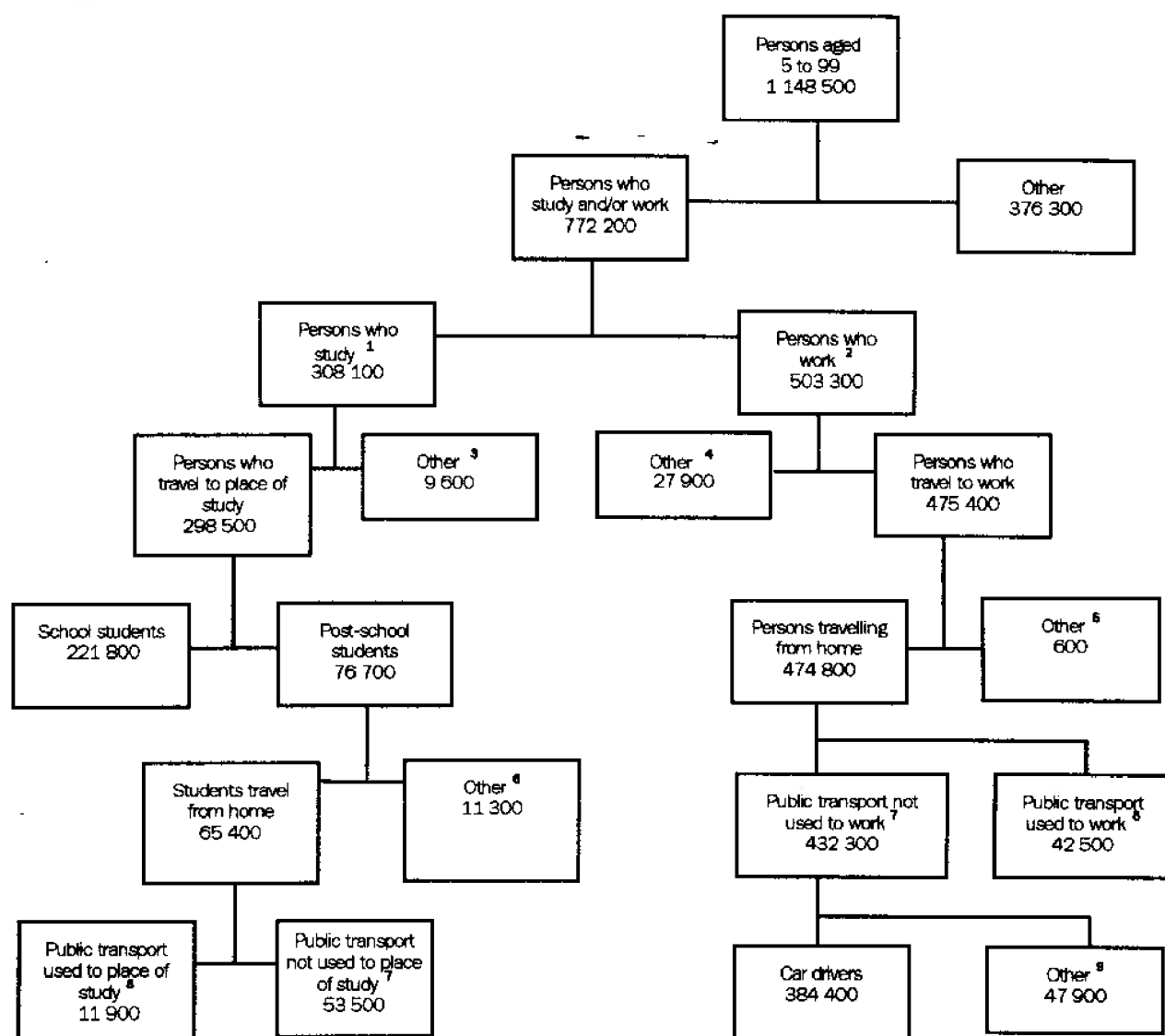
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PREFACE

This publication contains results of a survey on travel to work and school (or other place of study) which was conducted throughout the Greater Perth Region in October 1994 as a supplement to the Australia-wide Monthly Population Survey. The supplementary survey was conducted primarily at the request of the Western Australian Department of Transport.

Information was obtained about the modes of transport used to travel to work and place of study; the origin and destination of the journeys; departure time and duration; reasons for using or not using public transport; whether passengers were taken or not; types of trips linked to the main work or study journey; as well as a number of other features of the work and study trips.

The structure of the populations referred to in this survey are summarised in the following chart.



¹ Includes persons who study and work, excludes persons 80 years and over who do not also work.

² Persons who usually work 15 hours or more per week.

³ Persons who do not travel to place of study or attend less than once a week.

⁴ Persons who do not travel to work or work at a distant place.

⁵ Persons who usually leave for work from a place other than home.

⁶ Post school students who usually travel to place of study from a place other than home.

⁷ Public transport is not used at all in the journey.

⁸ Public transport is used whether alone or in combination with another form of travel.

⁹ Other modes include bicycle, walking, motorcycle, scooter or taxi.

MODES OF TRAVELTO WORK

A total of 475,400 persons within the Greater Perth Region (GPR) travelled to work during the survey period. (Table 1)

Most people who travelled to work in the GPR during the survey period did so by one mode only (93.6%), with the most common mode being car only (78.3% of all travellers, as drivers and 6.3% as passengers). The next most common modes were bus only (2.9%) and the combination of train and car (2.8%). Public transport was used by only a fraction of commuters to work (9.0%). (Table 1)

There was slightly higher usage of dual mode combinations among females than males (8% of females compared with 5% of males). Motor cycles/scooter and bicycles were almost exclusively used by males (95% and 100% respectively). Otherwise the pattern of mode usage was similar among the two sexes. (Table 1)

1 MODES OF TRAVEL TO WORK BY SEX

Modes of travel	Males	Females	Persons
		(000)	
Train only	*1.7	*1.2	*2.9
Bus only	6.1	7.7	13.8
Taxi only	**0.5	**0.7	*1.3
Car as driver only	229.4	142.8	372.2
Car as passenger only	13.6	16.4	30.1
Motor cycle/scooter only	5.7	**0.3	6.0
Bicycle only	6.9	**0.0	6.9
Walk only	5.1	5.5	10.6
Other single mode	*1.3	**0.2	*1.4
Train and bus	3.5	*3.3	6.7
Train and car	5.0	8.1	13.1
Bus and car	*1.1	*2.3	*3.4
Bus and walk	**0.2	*0.9	*1.1
Train and walk	**0.0	*0.3	**0.3
Train and bicycle	**0.4	**0.2	**0.6
Other dual mode combinations ¹	3.9	*1.0	5.0
Total	284.4	191.0	475.4

¹ Dual mode combinations include all arrangements eg 'train and bus' includes the arrangements 'train then bus' and 'bus then train'.

.....TO STUDY

Most students who travelled to their place of study during the survey period did so by one mode only (94.4%). (Table 2)

The most common mode of travel for students was car only with the majority of travellers being passengers in cars (35.2% of all travellers as passengers and 18.4% as drivers). (Table 2).

The next most popular modes of travel to place of study were walking (20.1%) and cycling (10.3%), closely followed by bus (9.4%). Public transport was used by 14.4% of students. Again, the main difference between the sexes in mode usage to place of study was the greater use of bicycle among males (68.5% of all cyclists). (Table 2).

2 MODES OF TRAVEL TO STUDY BY SEX

Modes of travel	Males	Females	Persons
		(000)	
Train only	*0.9	**0.5	*1.4
Bus only	13.1	14.9	28.0
Taxi only	**0.2	**0.0	**0.2
Car as driver only	28.0	26.9	54.9
Car as passenger only	49.0	56.3	105.2
Motor cycle/scooter only	*0.9	**0.0	*0.9
Bicycle only	21.1	9.8	30.8
Walk only	31.6	28.4	60.0
Other single mode	**0.4	**0.0	**0.4
Train and bus	*2.0	*3.3	5.3
Car and train	*0.9	*1.3	*2.2
Bus and car	*2.4	*2.4	4.8
Bus and walk	**0.5	**0.0	**0.5
Other dual mode combination	*2.1	*1.7	3.7
Total	153.0	145.5	298.5

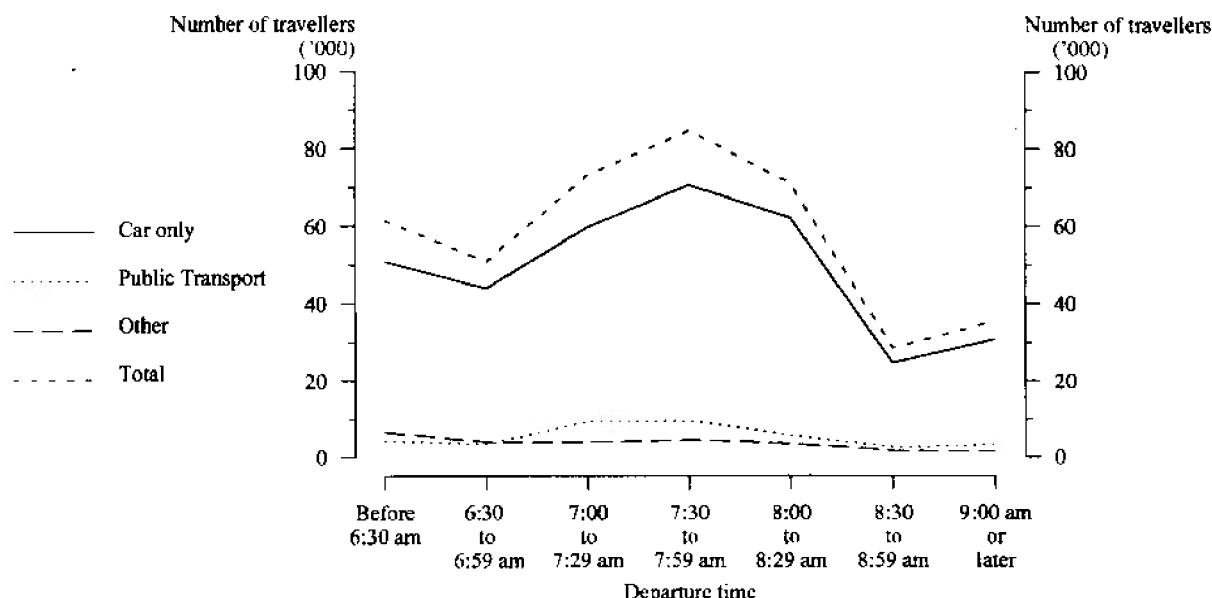
TIME LEFT HOME FOR WORK

Departures of persons leaving home for work reached a peak in the period 7:30 to 7:59 am (17.8%). During the period 7 am to 8:29 am a total of 229,000 commuters (48.2%) left for work. A large number of employed persons had variable departure times (14.5%) with most of this being due to shift work (61.2%). (Table 3)

A total of 61,500 travellers (12.9%) left for work before 6:30 am and 64,300 (13.5%) left for work at 8:30 or later. (Table 3)

Public transport users tended to cover a narrower range of departure times than did private transport users with 46% of public transport users leaving between 7 and 7:59 am, compared with 47% of private transport users leaving between 7 to 8:29 am. (Table 3)

CHART 1 : PERSONS WHO TRAVELLED TO WORK
Mode Of Travel By Travel Time



(a) 'Public Transport' includes mode combinations such as train and bus, train and car, bus and car, bus and walk, as well as individual public transport modes i.e. train only, bus only, ferry only.

(b) 'Other' includes all other single or dual mode combinations

Note: A number of travellers could not identify a particular departure time because of shift work or other reasons

3 MODE TO WORK : DEPARTURE TIME

Mode of travel	Before 6:30 am	6:30 to 6:59 am	7:00 to 7:29 am	7:30 to 7:59 am	8:00 to 8:29 am	8:30 to 8:59 am	9:00 am or later	Depends on shift	No usual time	Doesn't usually leave from home	Total
	(000)										
Car only	50.9	43.9	59.7	70.6	62.2	24.6	30.8	36.4	22.8	**0.5	402.3
Public transport at all	4.5	3.5	9.9	9.8	5.7	*2.5	*3.4	*2.0	*1.6	**0.0	42.9
Other	6.1	3.6	3.6	4.2	**0.0	*1.6	*1.4	4.0	*2.4	**0.0	30.2
Total	61.5	50.9	73.2	84.6	71.2	28.7	35.6	42.3	26.8	**0.5	475.4

4 ORIGIN AND DESTINATION OF TRAVEL : WORK AREA BY HOME AREA ¹

Workplace Area	Home Area							Total
	South West Metropolitan	South East Metropolitan	East Metropolitan	North Metropolitan	Central Metropolitan	Perth CBD	Mandurah	
	(000)							
South West Metropolitan	45.1	10.2	*2.6	*2.7	4.1	**0.5	**0.5	65.7
South East Metropolitan	11.5	38.9	10.7	10.3	*1.8	*1.1	**0.2	74.5
East Metropolitan	*1.3	4.2	24.6	12.7	*2.0	**0.2	**0.0	45.0
North Metropolitan	*3.1	4.3	7.2	40.4	4.3	**0.8	**0.0	59.9
Central Metropolitan	5.2	5.6	5.9	15.4	12.3	*1.2	**0.2	45.8
Perth CBD	15.4	18.1	13.4	36.4	14.8	4.4	**0.0	102.6
Mandurah	**0.7	**0.2	**0.0	**0.0	**0.0	**0.0	*3.2	4.1
Outside GPR	**0.7	**0.0	**0.4	**0.5	**0.0	**0.0	*1.5	*3.1
Total	83.0	81.4	64.8	118.5	39.2	8.1	5.6	400.7

¹ Persons who worked in a variety of locations were excluded from this table

ORIGIN AND DESTINATIONTO WORK

The majority of employed persons who lived in the GPR travelled to the Perth CBD (25.6%). The next most common destinations were the South East Metropolitan Area (18.6%), South West Metropolitan Area (16.4%) and North Metropolitan Area (14.9%). A small number of workers residing within the GPR travelled to places outside the GPR (0.8%). (Table 4)

The most common location of the workplace was the same area as the person's home, except for persons residing in Central Metropolitan Area where Perth CBD was the most common place of work (37.8%). (Table 4)

The most popular place of study for those who lived in the GPR was North Metropolitan Area (26.9%) with the next most common places being South West Metropolitan Area (18.6%) and South East Metropolitan Area (17.5%). (Table 5)

5 ORIGIN AND DESTINATION OF TRAVEL : STUDY AREA BY HOME AREA

Study Area	Home Area							Total
	South West Metropolitan	South East Metropolitan	East Metropolitan	North Metropolitan	Central Metropolitan	Perth CBD	Mandurah	
	(000)							
South West Metropolitan	45.3	4.4	*1.4	*1.8	*1.5	**0.0	*0.8	55.4
South East Metropolitan	*2.3	47.9	**0.4	**0.2	*0.5	*1.1	**0.0	52.3
East Metropolitan	**0.2	*0.9	35.1	*1.2	**0.0	**0.0	**0.0	37.5
North Metropolitan	*1.4	*1.6	*3.0	70.5	3.5	**0.0	**0.2	80.4
Central Metropolitan	*2.7	*1.8	*1.4	7.3	18.6	**0.6	**0.4	32.8
Perth CBD	6.0	9.9	3.5	5.7	4.0	4.5	**0.4	33.9
Mandurah	**0.0	**0.0	**0.0	**0.0	**0.0	**0.0	5.7	5.7
Outside GPR	**0.0	**0.0	**0.0	**0.0	**0.0	**0.0	**0.3	**0.3
Total	58.0	66.5	44.8	86.9	28.1	6.1	7.8	298.5

ORIGIN AND DESTINATIONTO STUDY

The most common location for study was the home region. This pattern was more marked for students than employed persons with a clear majority of students in each region living and studying in the same region (from 66.2% to 78.3%) whereas less than a clear majority of employed persons lived and worked in the same region (34.1% to 54.3% for regions excluding Mandurah). (Table 5)

PUBLIC TRANSPORT

The usage of public transport was higher among women than men for the journey to work (12.5% of women and 6.2% of men) (Tables 1 and 6). The majority of public transport users who travelled from home to work (56.7%) and home to place of study (55.5%) were women. (Tables 6 and 7)

Most journeys to work on public transport took up to 59 minutes (82.8%) with a large number of journeys taking from 30 to 59 minutes (66.6%). The majority of journeys to place of study by post-school students took 59 minutes or less (63.9%) and a large number of journeys took at least 40 minutes (58%) (Tables 6 and 7).

For 6,300 persons (14.8%) who travelled to work from home the journey took 60 minutes or more.

6

PUBLIC TRANSPORT : FARE TO WORK AND DURATION OF TRIP

Details	Males	Females	Persons
		(000)	
Fare to work			
Free	*1.7	*1.1	*2.7
Less than \$1	*1.8	4.2	6.0
\$1 to less than \$2	7.9	9.3	17.1
\$2 to less than \$3	5.4	8.6	14.1
\$3 to less than \$5	*0.9	**0.0	*0.9
\$5 or more	**0.3	**0.7	*1.1
Don't know	**0.4	**0.2	**0.6
Total	18.4	24.1	42.5
Duration of trip			
Less than 10 minutes	**0.2	**0.0	**0.2
10 to 19 minutes	*1.3	*1.0	*2.3
20 to 29 minutes	*1.3	*3.3	4.6
30 to 39 minutes	4.7	7.4	12.1
40 to 59 minutes	7.6	8.6	16.2
60 minutes or more	*3.1	*3.2	6.3
Variable	**0.2	**0.6	**0.7
Don't know	**0.2	**0.0	**0.2
Total	18.4	24.1	42.5

7 PUBLIC TRANSPORT : FARE TO STUDY ¹ AND DURATION OF TRIP

Details	Males	Females	Persons
		(000)	
Fare to study			
Free	**0.0	**0.2	**0.2
Less than \$1	*3.3	3.8	7.1
\$1 to less than \$2	*1.4	*2.3	3.7
\$2 to less than \$3	**0.5	**0.0	**0.5
\$3 to less than \$5	**0.0	**0.2	**0.2
\$5 or more	**0.0	**0.0	**0.0
Don't know	**0.0	**0.2	**0.2
Total	5.3	6.6	11.9
Duration of trip			
Less than 10 minutes	**0.2	**0.2	**0.4
10 to 19 minutes	**0.5	*1.3	*1.8
20 to 29 minutes	**0.7	**0.5	*1.3
30 to 39 minutes	**0.6	*1.1	*1.6
40 to 59 minutes	*0.9	*1.6	*2.5
60 minutes or more	*2.4	*2.0	4.4
Total	5.3	6.6	11.9

¹ This table only applies to post school students.

FARES TO WORK

One way fares to work commonly cost from \$1 to less than \$3 (73.4%) and fares to place of study mostly cost \$1 or less (60%). For 2,700 travellers (6.3%) no charge was incurred when public transport was used on the way to work. (Tables 6 and 7).

The most common reasons for using public transport on the way to work were to "save on travel costs" (28%), "no access to a car" (21.2%) and "avoids parking problems" (15.1%). (Table 8)

8 MAIN REASON FOR USE OF PUBLIC TRANSPORT TO WORK

Main reason for using public transport to work	Males	Females	Persons
		(000)	
Save on travel costs	4.8	7.1	11.9
Avoids parking problems	*2.3	4.1	6.4
Doesn't like peak traffic	*1.3	*2.5	3.8
No drivers license	*2.1	*2.2	4.3
No access to a car	4.2	4.8	9.0
Public transport within walking distance	*1.4	*1.5	*2.9
Environmental concerns	**0.4	**0.3	**0.7
Other	*1.7	*1.6	*3.3
Don't know	**0.2	**0.0	**0.2
Total	18.4	24.1	42.5

9

PRIVATE TRANSPORT : DURATION OF WORK TRIP

<i>Duration of work trip</i>	<i>Males</i>	<i>Females</i>	<i>Persons</i>
		(000)	
Less than 10 minutes	33.2	32.1	65.3
10 to 19 minutes	72.0	54.1	126.1
20 to 29 minutes	56.1	34.5	90.6
30 to 39 minutes	37.8	25.6	63.5
40 to 59 minutes	17.3	10.2	27.5
60 minutes or more	*3.3	*1.8	5.0
Variable	44.9	7.8	52.7
Don't know	*1.1	**0.5	*1.6
Total	266.6	166.6	432.3

PRIVATE TRANSPORTTIME TAKEN

The majority of journeys to work by private transport took less than 29 minutes (65.2%) which is shorter than the majority of journeys by public transport. Males reported variable duration of work trips more often than females (16.9% for males and 4.7% for females). (Table 9)

A total of 174,600 (45.4%) car drivers used their vehicles for work purposes apart from the trip to and from home. Males (54.3%) used their car in this way more often than females (31.5%). (Table 10)

10

PARKING FEES AND SELECTED CHARACTERISTICS OF VEHICLE

<i>Details</i>	<i>Males</i>	<i>Females</i>	<i>Persons</i>
		(000)	
Vehicle used for work			
Yes	127.3	47.2	174.6
No	107.1	102.7	209.8
Total	234.4	150.0	384.4
If vehicle is business vehicle			
Yes	85.3	10.3	95.6
No	149.1	139.7	288.8
Total	234.4	150.0	384.4
Parking fees			
Nil/free parking	211.7	128.9	340.7
Less than \$1	5.0	4.8	9.8
\$1 to less than \$3	6.9	6.2	13.0
\$3 to less than \$5	4.0	4.4	8.4
\$5 or more	*1.8	3.9	5.7
Variable	-3.8	*1.1	4.8
Don't know	*1.2	**0.7	*2.0
Total	234.4	150.0	384.4

PRIVATE TRANSPORT

OTHER CHARACTERISTICS

The vehicle used to travel to work was described as a "business vehicle" by 95,600 (24.9%) car drivers, with a higher proportion of males (36.4%) than females (6.9%) describing their vehicle this way. (Table 10)

A great majority (88.6%) of persons who drove to work in cars did not pay any parking fees. (Table 10)

11 MAIN REASON FOR NOT USING PUBLIC TRANSPORT TO WORK

Main reason for not using public transport to work	Males	Females	Persons
		(000)	
Public transport not within walking distance	5.3	4.1	9.3
Shares car/ takes passengers	8.2	11.5	19.6
Unreliable or infrequent service	10.5	9.3	19.8
Needs to transfer to another service	5.7	8.4	14.1
Takes too long	33.3	33.7	67.0
Public transport doesn't go where I want	49.0	30.3	79.3
Vehicle used for work purposes	78.0	18.0	96.6
Works close to home	9.1	7.9	16.9
Fares cost too much	*0.9	*1.4	*2.3
Public transport unsafe at night	**0.0	*1.9	*1.9
Starts work early/finishes late	9.3	5.4	14.7
Works shift or variable hours	7.9	7.0	15.0
Uses company car	9.0	*1.1	10.1
Prefers to drive/ride/walk	19.2	13.3	32.5
Other	16.6	11.9	28.5
Not considered	*1.8	**0.7	*2.5
Don't know	*1.3	*9.0	*2.2
Total	265.6	166.6	432.3

REASONS FOR NOT USING PUBLIC TRANSPORTTO WORK

The most common reasons for not using public transport to travel to work were "vehicle used for work purposes during the day" (22.3%), "public transport doesn't go where I want to go" (18.3%) and "(it) takes too long" (15.5%). "Vehicle used for work purposes during the day" was a more popular reason among males (29.4%) than females (10.8%). (Table 11)

12 MAIN REASON FOR NOT USING PUBLIC TRANSPORT TO STUDY ¹

Main reason for not using public transport to place of study	Males	Females	Persons
		(000)	
Public transport not within walking distance	**0.0	**0.6	**0.6
Shares car/ takes passengers	*1.1	*1.4	*2.5
Unreliable or infrequent service	*3.4	*1.6	5.0
Needs to transfer to another service	*1.1	*2.0	*3.1
Takes too long	10.2	8.8	19.0
Public transport doesn't go where I want	*3.1	4.0	7.1
Lives close to place of study	**0.7	*2.9	3.7
Fares cost too much	**0.2	**0.0	**0.2
Public transport unsafe at night	**0.0	**0.7	**0.7
Prefers to drive/ride/walk	4.0	3.7	7.7
Other	*1.3	*1.6	*2.9
Not considered	*0.9	**0.2	*1.1
Total	26.0	27.5	53.5

¹ This table only applies to post school students.

REASONS FOR NOT USING PUBLIC TRANSPORTTO STUDY

Among post-school students the most common reason for not using public transport was "(it) takes too long" (35.5%), "prefers to drive/ride/walk" (14.4%) and "public transport doesn't go where I want to go" (13.3%). (Table 12)

13

DRIVERS OF CARS TO WORK PLACE : REASONS FOR TAKING PASSENGERS FROM SAME HOUSEHOLD¹

Reasons for passengers from this household	Males	Females	Persons
		(000)	
Save on travel costs	7.5	*2.6	10.1
Only one vehicle available in household	7.0	*3.4	10.4
Public transport not suitable for passenger	5.2	3.7	8.9
Drives by passengers place of work	4.5	*1.6	6.1
Passenger works at same/nearby place	11.6	4.1	15.7
Drops children off at school, etc	14.6	19.2	33.8
Environmental concerns	*1.1	**0.2	*1.3
Other	4.6	*1.7	6.3

¹ A person may report multiple reasons

PASSENGERSON WORK TRIPS

51,800 (13.5%) of persons who drove their cars to work also took one or more passengers with them.

The most popular reasons that car drivers took passengers from within the same household were "drops children off at school etc" (33,800), "passengers (are) workers at (the) same/nearby place of work" (15,700), "only one vehicle available in the household" (10,400) and "save on travel costs" (10,000). (Table 13)

The most popular reasons for not taking passengers from within the same household as the driver were "other household member work/study in different areas" (167,200), "other household members work different hours" (109,500) and "another vehicle/motor cycle available (in the household)" (99,000). (Table 14)

14

DRIVERS OF CARS TO WORK PLACE : REASONS FOR NOT TAKING PASSENGERS FROM SAME HOUSEHOLD

Reasons for no passengers from this household	Males	Females	Persons
		(000)	
Other household members take public transport	6.5	4.5	11.0
Other household members do not work/study outside	44.4	7.2	51.7
Reluctant to commit to regular start times	7.0	2.3	9.4
Another vehicle/motor cycle available	62.9	36.1	99.0
Other household members work different hours	64.0	45.5	109.5
Other household members work/study in different areas	93.4	73.8	167.2
Driver works shifts or variable hours	29.0	16.7	45.8
Other	5.6	4.7	10.3
Don't want passengers	*2.2	*2.1	4.3
Don't know	**0.4	**0.5	*0.9

15 DRIVERS WITH LINK TRIP TO WORK : FREQUENCY OF LINK TRIP

Frequency of link trip to work	Males	Females	Persons
		(000)	
One day	14.9	11.6	26.5
Two days	7.1	7.2	14.3
Three days	4.5	*3.0	7.5
Four days	**0.8	*1.7	*2.5
Five days	3.7	*2.6	6.3
Six or seven days	*0.9	**0.5	*1.4
Less than one day a week	7.7	5.7	13.4
Don't know	*1.1	**0.5	*1.6
Total	40.6	32.9	73.5

LINK TRIPS

73,500 (19.1%) of persons who drove to work made a trip which was linked to the home to work trip. Of these 26,500 (36%) make such a trip once a week, 14,300 (19.5%) twice a week and 17,700 (24.1%) three or more times a week. (Table 15)

Female drivers were more likely to make linked trips on the way to work than males (21.9 % of females compared to 17.3% of males). (Table 15)

A larger number of car drivers made a linked trip on the way home from work (258,800 or 67.3% of car drivers). Of these 73,000 (28.2%) made such a journey once a week, 78,600 (30.4%) twice a week and 81,400 (31.4%) three or more times a week. (Table 16)

Again, female drivers were more likely to make a linked trip on the way home than males (77% of females compared with 61% of males). Females also made these trips slightly more often with 94.7% making such a trip once a week or more while 86.3% of males made this trip once a week or more. (Table 16)

16 DRIVERS WITH LINK TRIP FROM WORK : FREQUENCY OF LINK TRIP

Frequency of link trip from work	Males	Females	Persons
		(000)	
One day	45.1	27.9	73.0
Two days	41.3	37.4	78.6
Three days	22.0	25.1	47.1
Four days	6.2	8.5	14.7
Five days	7.8	10.0	17.8
Six or seven days	*1.3	**0.5	*1.8
Less than one day a week	18.3	6.0	24.3
Don't know	*1.3	**0.0	*1.3
Total	143.3	115.5	258.8

17 DRIVERS WITH LINK TRIP TO WORK : PURPOSE OF LINK TRIP ¹

Purpose of link trip to work	Males	Females	Persons
		(000)	
Shopping for food or household items	15.8	18.8	34.6
Recreation, sport or leisure activities	5.4	5.2	10.5
Visiting family or friends	10.7	9.6	20.4
Attending classes	*2.3	*1.8	4.2
Personal business	24.2	17.3	41.5

¹ Each trip may have more than one purpose

LINKED TRIPS.....TO WORK

The most common types of linked trip on the way to work were "personal business" (41,500), "shopping for food or household items" (34,600) and "visiting family or friends" (20,400). (Table 17)

.....FROM WORK

On the way home from work the most popular types of trips were "shopping for food or household items" (194,100), "visiting family or friends" (123,400) and "personal business" (117,900). (Table 18)

"Shopping for food or household items" was given more often as a purpose for linked trips both on the way to work and from work to home amongst females than males (57.1% of trips to work by females and 38.9% by males; 88.5% of trips on the way home by females and 64.1% by males). (Tables 17 and 18)

18 DRIVERS WITH LINK TRIP FROM WORK : PURPOSE OF LINK TRIP

Purpose of link trip from work	Males	Females	Persons
		(000)	
Shopping for food or household items	91.9	102.2	194.1
Recreation, sport or leisure activities	36.5	26.8	63.3
Visiting family or friends	64.3	59.1	123.4
Attending classes	10.3	9.3	19.6
Personal business	66.8	51.1	117.9

EXPLANATORY NOTES

INTRODUCTION

1 This publication summarises the results of a Survey of *Travel to Work and School* that was conducted throughout Western Australia during October 1994 as a supplement to the Australia-wide Monthly Population Survey.

MONTHLY POPULATION SURVEY

2 The Monthly Population Survey is based on a multi-stage area sample of private and non-private dwellings. Private dwellings include houses, flats, home units etc. Non-private dwellings include hotels, motels, caravan parks, prisons, hospitals, boarding schools etc.

3 The sample covers about two-thirds of one per cent of the civilian population of Australia and includes about one per cent of Western Australia's population. Information is obtained from the occupants of selected dwellings by personal interview.

4 The Monthly Population Survey comprises the Labour Force Survey and for most months of the year, an additional supplementary topic. The main emphasis is on the regular collection of specific data on demographic and labour force characteristics of the population and for this reason, this component is usually referred to as the Labour Force Survey. Supplementary surveys are carried out on a wide variety of topics.

SCOPE OF MPS

5 All persons aged 15 years and over are included in the Labour Force Survey except:

- Certain diplomatic personnel of overseas governments customarily excluded from census and estimated populations;
- overseas visitors holidaying in Australia;
- members of the Australian permanent defence forces; and
- members of non-Australian defence forces (and their dependants) stationed in Australia.

SUPPLEMENTARY SURVEY

6 The Supplementary Survey was conducted using a sub-set of the sample of private dwellings and caravan parks in Western Australia that were included in the Monthly Population Survey. This provided a sample of approximately 6,300 persons where a full response was obtained. Excluded from the Supplementary Survey were:

- all visitors;
- residents of non-private dwellings, except for caravan parks; and
- persons living outside the Greater Perth Region.

7 Information was collected by personal interview of an adult in the household, 'any responsible adult', on behalf of usual residents aged 5 years or over. Respondents were asked about their usual travel patterns to work and place of study. The survey was conducted during the two weeks beginning 2 October 1994.

RELATED PUBLICATIONS AND INFORMATION

8 The ABS produces a wide range of publications of social and demographic statistics. Other ABS publications which relate to the survey topic include:

TITLE	CATALOGUE NO.
Travel to Work, School and Shops, Victoria	9201.2
Drivers and Passengers: Travel to Work, Adelaide Statistical Division	9203.4
Journey to work data from the Population Census	

9 Current publications produced by the ABS are listed in the Catalogue of Publications, Australia (1101.0), which is available from any ABS office.

PREVIOUS STATE SUPPLEMENTARY SURVEYS

10 Users may be interested in reading past Western Australian State Supplementary publications. These have included:

YEAR	TITLE	CATALOGUE NO
1990	Arts and Crafts, Purchasing and Participation	4111.5
1991	Crime Victims	4506.5
1992	Conservation of Energy, Water and the Environment	4605.5
1993	Workers with Family Responsibilities	4408.5

SYMBOLS AND OTHER USAGES

The following symbols are used in this publication:

- * estimate is subject to a relative standard error of between 25 and 50%.
- ** estimate is subject to sampling variability too high for most practical purposes (more than 50%).

Refer to the Technical Notes which commence on the following page.

n.a. not applicable.

GLOSSARY

<i>Business vehicle</i>	A vehicle which is supplied by the employer or company for use by the driver. This includes vehicles owned by self-employed persons which are not registered as "family vehicles".
<i>College</i>	Place of study of post-school student.
<i>Drivers</i>	Employed persons who usually drive to work by car from within the GPR.
<i>Don't know</i>	On occasions the "any responsible adult" is unable to provide an answer to a question on behalf of another resident in the household.
<i>Employed persons</i>	Persons aged 15 years or over who usually work 15 hours or more per week and live within the GPR.
<i>Greater Perth Region (GPR)</i>	<p>The Greater Perth Region (GPR) consists of 7 areas made up of the following SLAs:</p> <ul style="list-style-type: none"> ■ Perth CBD - Perth (C)- Inner, - Outer, - South, ■ Central Metro - Perth (C) - North, Perth (C) - Wembley Coastal, Claremont (T), Cottesloe (T), Mosman Park (T), Nedlands (C), Peppermint Grove (S), Subiaco (C), ■ East Metro - Bassendean (T), Bayswater(C), Kalamunda (S), Mundaring (S), Swan (S) ■ North Metro - Stirling (C), Wanneroo (C). ■ South West Metro - Cockburn (C), East Fremantle (T), Fremantle (C), Kwinana (T), Melville (C), Rockingham (C). ■ South East Metro - Armadale (C), Belmont (C), Canning (C), Gosnells (C), Serpentine-Jarrahdale (S), South Perth (C). ■ Mandurah - Mandurah (C). <p>The map on page 24 shows the split of the GPR into these seven areas.</p>
<i>Link trip</i>	A trip linked to the work/home trip made by a car driver in the 4 weeks prior to the survey period. A linked trip should involve a diversion or stop of at least 10 minutes duration either on the way to work or home from work and should not be work related.
<i>Nil/free parking</i>	No net cost is incurred by the respondent for parking their car. This may arise because of no charge being levied or from a reimbursement of all costs.
<i>Modes of travel</i>	Information was collected on the single or dual mode(s) of travel usually used for the journeys made by respondents to work and/or school. "Usually" refers to the majority of trips made per week. Notice that information on the return journeys was not collected.
<i>Passenger from same household</i>	These are persons who live in the same household as the driver, and who travel with the driver when the driver goes to work. These passengers need not themselves be travelling to work.
<i>Place of study</i>	This includes educational institutions (primary or secondary schools, institutes or colleges) as well as church or community halls and other facilities whose primary function is not educational.

<i>Post-school students</i>	Students attending an institution other than primary or secondary school.
<i>Private transport</i>	Motor vehicles (either as driver or passenger) including cars, trucks, vans, utilities and motor cycles, as well as taxis, bicycles, walking and any other non-public transport.
<i>Public transport</i>	Any kind of bus (Transperth, private bus line or community bus service), train or ferry service available to the public.
<i>Students</i>	Persons who are taking any course of study lasting six months or more. This includes recreational and hobby courses.
<i>Vehicle used for work</i>	Where the vehicle is regularly used for work purposes other than travel to and from home.

TECHNICAL NOTES

The figures contained in this publication are estimates based on a sample of approximately 6,300 persons in Western Australia in October 1994.

RELIABILITY OF THE ESTIMATES

The estimates provided in this publication may be subject to two types of error:

Sampling error

This is the difference which would be expected between the estimate and the corresponding figure that would have been obtained from a collection based on the whole population, using the same questionnaires and procedures. Estimates of sampling error are illustrated below.

Non-sampling error

Inaccuracies may occur because of imperfections in reporting by respondents and interviewers, and errors made in coding and processing the data. These errors can occur whether the estimates are derived from a sample or a complete enumeration. Every effort is made to reduce non-sampling error to a minimum by careful design of questionnaires, intensive training and supervision of interviewers and efficient operating procedures.

INTERPRETATION OF RESULTS

Since the estimates in this publication are based on information obtained from occupants of a sample of dwellings both of the above types of errors must be taken into account

ESTIMATES OF SAMPLING ERROR

One measure of the likely difference which would be expected between the estimate based on a sample and the figure that would have been obtained from a complete collection is the standard error, see following table.

There are about two chances in three (67%) that an estimate will differ by less than one standard error from that which would have been obtained if all households had been included in the survey. There are about nineteen chances in twenty (95%) that the difference will be less than two standard errors.

A standard error expressed as a percentage of the estimate is known as the 'relative standard error'. For example, if an estimate of 4,500 persons has a standard error of 1,125, then the estimate has a relative standard error of $1,125/4,500 \times 100 = 25\%$. The relative standard error is a useful measure in that it provides an immediate indication of the percentage errors likely to have occurred due to sampling

Estimates below 795 persons have been included in this publication preceded by two asterisks (**). Such estimates are subject to very high relative standard error (more than 50%) and should be used with great care.

Estimates between 795 and 3,410 persons have been included in this publication preceded by an asterisk, e.g. *2.6. This is to highlight the need for care in using the data because of the high relative standard error (between 25 and 50%).

An example of the calculation on use of standard errors is as follows. From Table A we see that a population estimate of 5,000 persons (column 1) has a standard error (S.E.) of 1,020 (column 2). Therefore, there are two chances in three that the number which would result if all persons were included in the survey lies in the range 3,980 to 6,200 (one S.E. either side of the estimate). There are 19 chances in 20 that the true number lies in the range 2,960 to 7,220 (2 S.E.s either side of the estimate, column 4).

A more detailed explanation of standard errors can be found in the technical notes of the *Labour Force, Australia* (6203.0)(monthly).

**STANDARD ERRORS OF ESTIMATES ¹ TRAVEL TO WORK AND SCHOOL
WESTERN AUSTRALIA, OCTOBER 1994**

<i>Size of estimate</i>	<i>Standard error of estimate ¹</i>	<i>Relative standard error ²</i>	<i>95% confidence interval</i>
'000	'000	%	
300	230	75.2	0 - 760
400	270	67.0	0 - 940
500	310	61.1	0 - 1 120
600	340	56.6	0 - 1 280
700	370	52.9	0 - 1 440
800	400	49.9	0 - 1 600
900	430	47.4	40 - 1 760
1 000	450	45.2	100 - 1 900
1 100	480	43.3	140 - 2 060
1 200	500	41.6	200 - 2 200
1 300	520	40.0	260 - 2 340
1 400	540	38.7	320 - 2 480
1 500	560	36.3	380 - 2 620
1 600	580	35.3	440 - 2 760
1 700	600	34.3	500 - 2 900
1 800	620	33.4	560 - 3 040
1 900	640	32.6	620 - 3 180
2 000	650	31.8	700 - 3 300
2 100	670	31.1	760 - 3 440
2 200	690	30.4	820 - 3 580
2 300	700	29.8	900 - 3 700
2 400	720	29.2	960 - 3 840
2 500	730	26.6	1 040 - 3 960
3 000	800	24.6	1 400 - 4 600
3 500	860	23.0	1 780 - 5 220
4 000	920	21.6	2 160 - 5 840
4 500	970	20.4	2 560 - 6 440
5 000	1 020	18.5	2 960 - 7 040
6 000	1 110	15.8	3 780 - 8 220
8 000	1 270	13.9	5 460 - 10 540
10 000	1 400	9.3	7 200 - 12 800
20 000	1 870	7.2	16 260 - 23 740
30 000	2 190	6.0	25 620 - 34 380
40 000	2 430	5.2	35 140 - 44 860
50 000	2 640	4.6	44 720 - 55 280
60 000	2 810	4.2	54 380 - 65 620
70 000	2 960	3.8	64 080 - 75 920
80 000	3 100	3.5	73 800 - 86 200
90 000	3 220	3.3	83 560 - 96 440
100 000	3 330	2.8	93 340 - 106 660
125 000	3 570	2.8	117 860 - 132 140
150 000	3 770	2.5	142 460 - 157 540
175 000	3 950	2.2	167 100 - 182 900
200 000	4 100	2.0	191 800 - 208 200
300 000	4 590	1.5	290 820 - 309 180
400 000	4 940	1.2	390 120 - 409 880
500 000	5 220	1.0	489 560 - 510 440

¹ These figures have been rounded to the nearest 100

² These figures have been calculated using the actual figures.

Travel to Work and Schools

Western Australia

October 1994

Need Additional data?

The survey includes a comprehensive collection of information on the travel patterns of Western Australians. A customised service is now available to meet special data requirements

Topics covered by the survey include

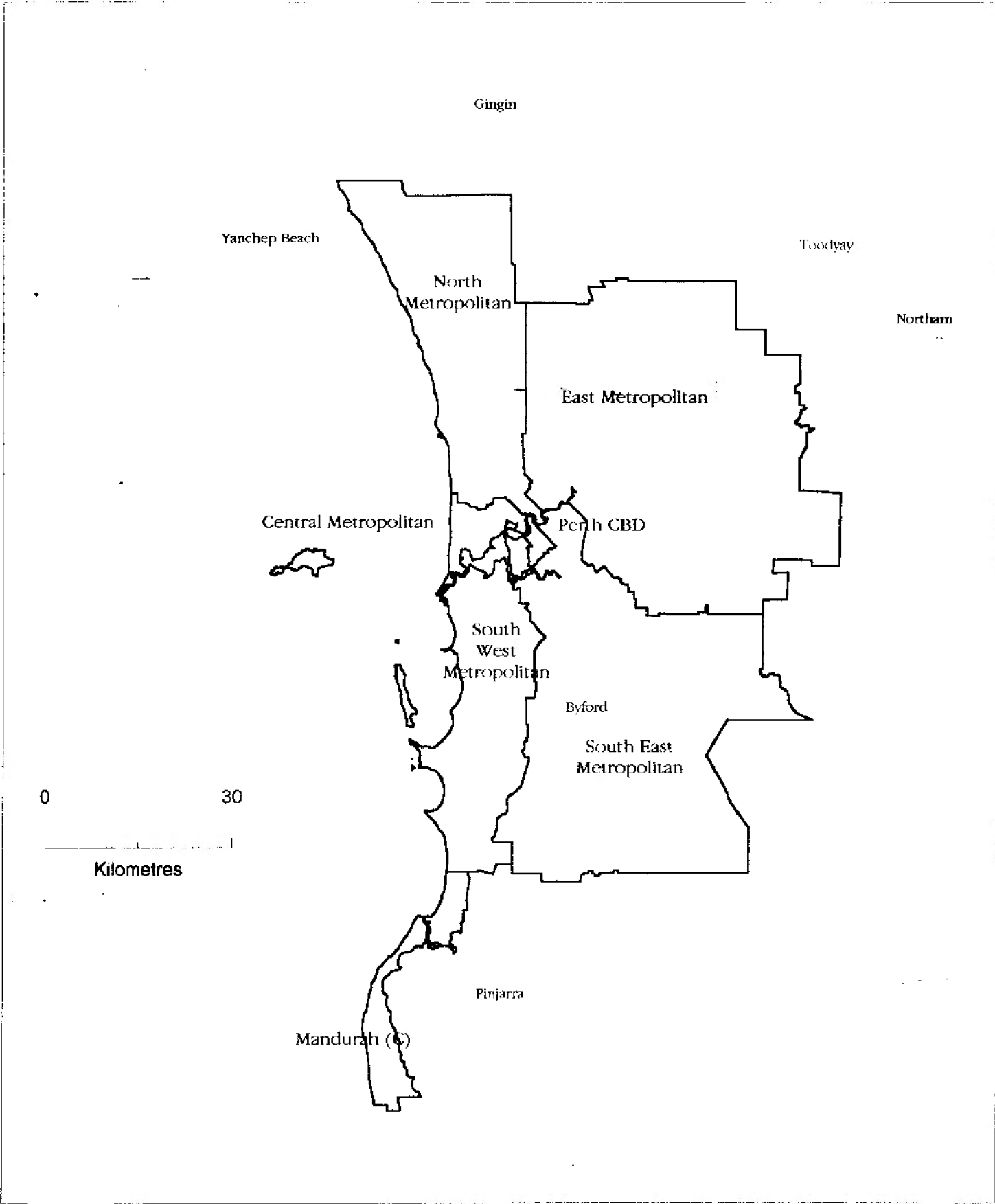
- Main and additional modes of travel to work
- Main and additional modes of travel to study
- Perceived distance travelled to work or study
- Number of persons walking to work
- Length of time taken to travel to work or study
- Reasons for not using public transport to travel to work or study
- Number of passengers taken on work trip
- Peak travelling time to work and study
- Distance travelled to work and study
- Reasons for not using public transport to travel to work
- Time taken to walk to bus stop/train station
- Duration of work or study trip

Data can be classified by the following variables:

- Age
- Sex
- Labour Force Status
- Whether school or post-school student
- Labour Force Region of place of work
- Labour Force Region of place of study
- Labour Force Region of usual residence
- Industry of employment

To discuss your data requirements from Travel To Work and School or for further information regarding this survey please contact **Ellen Stevens** on (09) 360 5394.

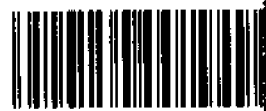
Greater Perth Region



Based on 1991 Statistical Subdivision Boundaries
Source: 1991 Census of Population and Housing
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